

CLAIMS

- [001] A method for controlling heating processes in a coffee machine (10), which is particularly suitable for preparing coffee on the basis of coffee pads, wherein the coffee machine (10) comprises a continuous flow heater (38) and a pump (32) for conveying water through the continuous flow heater (38) comprising the steps:
- measuring a temperature in the area of the continuous flow heater (38) and/or the water conveyed by the pump;
 - influencing the amount of water conveyed by the pump (32) depending on the temperature.
- [002] The method according to claim 1, characterised in that a temperature is measured between the continuous flow heater (38) and the brewing chamber (20) and this temperature is taken into account when influencing the amount of water conveyed by the pump (32) or the heating power.
- [003] The method according to claim 1 or claim 2, characterised in that a temperature is measured between the pump (32) and the continuous flow heater (38) and this temperature is taken into account when influencing the amount of water conveyed by the pump (32) or the heating power.
- [004] The method according to any one of claims 1 to 3, characterised in that the temperature difference is measured between an inlet (88) to the continuous flow heater (38) and an outlet (90) from the continuous flow heater (38) and this temperature is taken into account when influencing the amount of water conveyed by the pump (32) or the heating power.
- [005] The method according to any one of claims 1 to 4, characterised in that the amount of water conveyed by the pump (32) is influenced by a pulsed operation of the pump (32).

- [006] The method according to claim 5, characterised in – that the pump (32) is switched on before the beginning of heating and is operated with a first cycle ratio between switch-on time and switch-off time,
- that the cycle ratio becomes larger with increasing temperature and
 - that the cycle ratio is 1 above a predefined temperature threshold.
- [007] The method according to any one of the preceding claims, characterised in that in addition to influencing the amount of water conveyed by the pump (32), the heating power is influenced depending on the temperature in the area of the continuous-flow heater (38).
- [008] An electronic control device for controlling heating process in a coffee machine (10), which is particularly suitable for preparing coffee using coffee pads, wherein the coffee machine (10) has a continuous flow heater (38) and a pump (32) for conveying water along a conveying section (84) through the continuous flow heater (38) and a temperature sensor (56, 58, 60), characterised in that the electronic control device comprises means for influencing the amount of water conveyed by the pump (32) depending on the temperature measured by the temperature sensor (56, 58, 60).
- [009] The electronic control device according to claim 8, characterised in that the means are formed by clocked operation of the pump (32).
- [010] The electronic control device according to claim 8, characterised in that the means are constructed for varying the flow resistance.
- [011] The electronic control device according to claim 10, characterised in that the means for varying the flow resistance comprise a restrictor (86).
- [012] The electronic control device according to claim 11, characterised in that the restrictor (86) is constructed as a slider disposed in the conveying section (84).
- [013] The electronic control device according to any one of claims 8 to 12, characterised in that in addition to influencing the amount of water conveyed by the pump (32), means are also provided for influencing the heating power depending on the temperature.

- [014] The electronic control device according to claim 13, characterised in that the means for influencing the heating power comprise a controller for switching different numbers of a plurality of heaters (42, 44) of the continuous flow heater (38).
- [015] The electronic control device according to any one of claims 8 to 14, characterised in that the temperature sensor (58) is arranged in a water-guiding section between the continuous flow heater (38) and a brewing chamber (20).
- [016] The electronic control device according to claim 15, characterised in that at least one temperature sensor (56, 58) is arranged on the conveying section (84) and/or in the water-guiding section.
- [017] The electronic control device according to claim 15, characterised in that at least one temperature sensor (56) is disposed directly on a heater (42, 44) of the continuous flow heater (38).
- [018] The electronic control device according to any one of claims 8 to 17, characterised in that a temperature sensor (60) is arranged between the pump (32) and the continuous flow heater (38) and the temperature measured by this temperature sensor (60) is taken into account when influencing the amount of water conveyed by the pump (32) or the heating power.
- [019] The electronic control device according to any one of claims 8 to 18, characterised in that a temperature sensor (60) is located upstream of the continuous flow heater (38) in the flow direction of the water.
- [020] The electronic control device according to any one of claims 8 to 18, characterised in that a temperature sensor (58) is located downstream of the continuous flow heater (38) in the flow direction of the water.
- [021] The electronic control device according to claim 19, characterised in that the electronic control device comprises a differential element for determining the temperature difference between a temperature measured by a temperature sensor (60)

-18-

located upstream of the continuous flow heater (38) and a temperature measured by a temperature sensor (58) located downstream of the continuous flow heater (38) for influencing the amount of water conveyed by the pump (32).